

AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated in the following listing of all claims:

What is claimed is:

1. (Currently Amended) A method of bypassing a ~~a[[n]] infrequent~~ null pointer condition check when compiling a source program comprised of:  
 creating a fault to target translation table of the ~~infrequent~~ null pointer condition check if the null pointer condition check infrequently encounters null pointer conditions;  
 relating the ~~infrequent~~ null pointer condition check to a procedural instruction in the fault to target translation table; and  
 compiling the source program to an executable program.
2. (Currently Amended) The method of claim 1 further comprising:  
 gathering statistics as to the number of null pointer condition occurrences the ~~infrequent~~ null pointer condition check encounters~~occurs~~;  
 determining an acceptable rate of occurrence; and  
 indicating ~~entering the null pointer condition check infrequent condition~~ into the fault to target translation table if the null pointer condition occurrences for the null condition pointer check infrequent null pointer condition does not exceed the acceptable rate of occurrence.
3. (Currently Amended) The method of claim 1 further comprising:  
responsive to a fault that corresponds to a null pointer condition, passing fault to target translation data from the fault to target translation table to the compiler using a handler program to direct the fault to a target indicated by the fault to target translation data.
4. (Original) The method of claim 2 further comprising:  
 passing fault to target translation data from the fault to target translation table to the compiler using a handler program.

5. (Original) The method of claim 1 further comprising:  
accessing the fault to target translation table during compiling of the source program.
6. (Original) The method of claim 2 further comprising:  
accessing the fault to target translation table during compiling of the source program.
7. (Original) The method of claim 3 further comprising:  
accessing the fault to target translation table during compiling of the source program.
8. (Original) The method of claim 4 further comprising:  
accessing the fault to target translation table during compiling of the source program.
9. – 32. (Cancelled)
33. (New) A method for bypassing null pointer condition checks, the method comprising:  
selectively eliminating from code null pointer condition checks that encounter null  
pointer conditions less frequently than a given threshold according to profile  
feedback for the code; and  
installing entries for the selectively eliminated null pointer condition checks in a table,  
wherein the installed entries are utilized to direct execution of the code to  
respective units of the code that handle null pointer conditions.
34. (New) The method of claim 33 further comprising identifying the null pointer  
condition checks that encounter null pointer conditions less frequently than the given threshold.
35. (New) The method of claim 33 further comprising extracting information about null  
pointer condition frequencies from the profile feedback for the code.
36. (New) The method of claim 35 further comprising determining those of the null  
pointer condition checks that have profile feedback information that indicates the null pointer  
condition checks occur less frequently than the given threshold.

37. (New) The method of claim 33 further comprising generating executable code from the code with eliminated null pointer condition checks.

38. (New) The method of claim 33 further comprising generating the table to associate faults with respective null pointer condition handling code units.

39. (New) The method of claim 38 further comprising populating the table with instruction identifiers of instructions associated with the eliminated null pointer condition checks and respective ones of the null pointer condition handling code units.

40. (New) The method of claim 39 further comprising the table indicating instruction identifiers for instructions that cause faults corresponding to the eliminated null pointer condition checks and identifiers for the null pointer condition handling code units.

41. (New) An apparatus comprising:

memory; and

means for modifying a program to eliminate those null pointer condition checks that encounter null pointer conditions infrequently according to profile feedback for the program and to direct faults that correspond to the elimination to areas of the program that handle null pointer conditions.

42. (New) The apparatus of claim 41 further comprising means for maintaining a table that associates faults with respective ones of the null pointer condition handling areas of the program.

43. (New) The apparatus of claim 41 further comprising means for extracting information from the profile feedback that indicates frequency of null pointer condition occurrences.

44. (New) A computer program product encoded on one or more machine-readable media, the computer program product comprising:

a first sequence of instructions executable to identify those null pointer condition checks of a program that occur less frequently than a threshold according to profile feedback for the program and to associate code of the program that depends on the identified null pointer condition checks with corresponding program code that handles null pointer conditions; and

a second sequence of instructions executable to eliminate the identified null pointer condition checks.

45. (New) The computer program product of claim 44 further comprising the first sequence of instructions executable to populate a table with the associations.

46. (New) The computer program product of claim 45, wherein the associating comprises associating addresses of the null pointer condition check dependent program code with respective addresses of the null pointer condition handling program code.

47 (New) The computer program product of claim 44 further comprising a third sequence of instructions to generate an executable representation of the program with eliminated null pointer condition checks.

48. (New) The computer program product of claim 44 further comprising a third sequence of instructions to extract information from the profile feedback that indicates frequency of null pointer conditions.